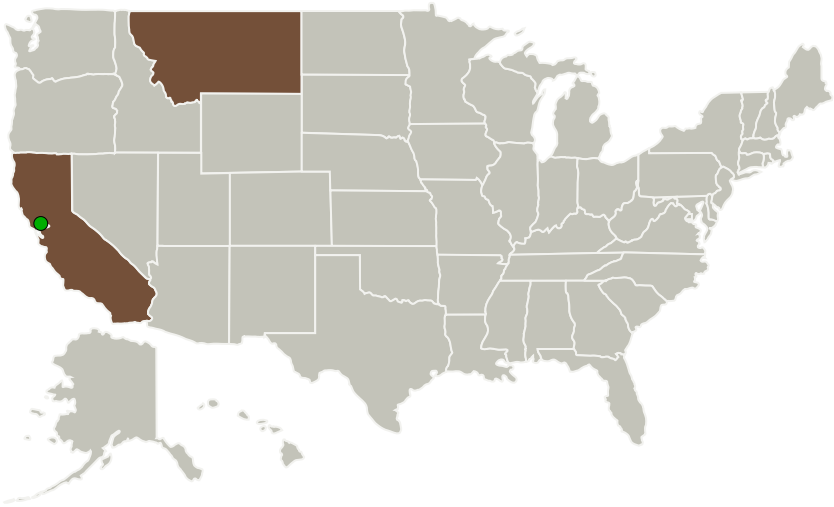
Dropsonde System for Unmanned Aerial Vehicles, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Unmanned Aerial Vehicles (UAVs) are assuming more numerous and increasingly important roles in global environmental and atmospheric research. There is a corresponding growth in equipment needs for UAVs so that they may meet their mission goals. Some critical measurement needs can only be satisfied by in-situ measurements. Key examples of such measurements include detailed atmospheric profiles, point meteorological conditions on the surface, and in-situ measurements for calibration and validation of remote sensing systems. A scalable dropsonde launcher will be developed that will be able to fit a range of UAVs. It will be able to launch a variety of dropsondes derived from Anasphere's existing radiosonde and dropsonde families. Dropsondes for high-precision, high-density, and surface-based measurements will be developed. Phase I will involve designing a launcher that uses an existing Anasphere dropsonde and fits into a representative UAV provided by Vanilla Aircraft. The launcher will be demonstrated in the laboratory and in a high-speed airflow environment. The ultimate result of the project will be a dropsonde system that can be fitted to many NASA UAVs and enable them to gather in-situ atmospheric profiles and surface measurements using dropsondes.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Anasphere, Inc.	Lead Organization	Industry	Belgrade, Montana
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Montana

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140041)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Anasphere, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

John A Bognar

Co-Investigator:

John Bognar

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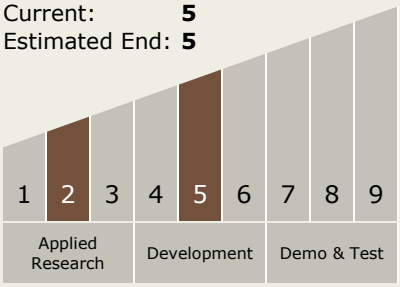
Technology Maturity (TRL)

Start: **2**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.4 Advanced Propulsion
    - TX01.4.4 Other Advanced Propulsion Approaches

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System